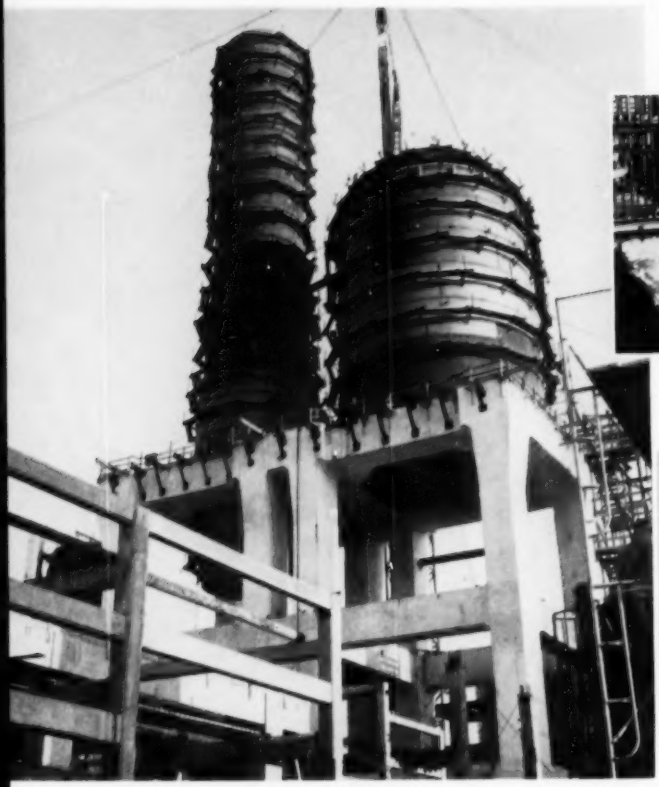
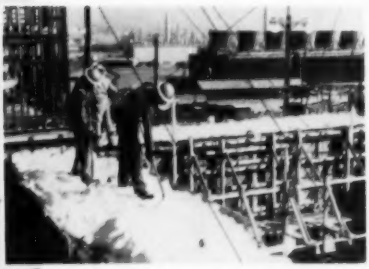
ACI News Letter

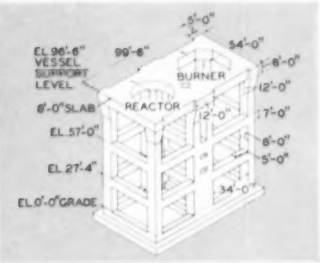
Vol. 28, No. 3 JOURNAL of the AMERICAN CONCRETE INSTITUTE September 1956



Consulting Engineer: Prof. R. E. Davis
Designer and Builder: Bechtel Corporation



ICE BATH—To reduce thermal shrinkage, crushed ice was used for cooling preplaced aggregate and mixing water. Design called for closely spaced reinforcing and special aggregate to get 4000-psi concrete at 60 days.



SPACE FRAME—Mammoth PREPAKT concrete structure supports two heavy pressure vessels, withstands 16,000-ton operating load and 1,400-ton horizontal design thrust.

use of Prepakt concrete simplifies building of massive space frame

Shrinkage Controlled by Preplacing Aggregate and Precooling Materials with Crushed Ice

To assure high quality concrete in a huge, heavily reinforced space frame for the world's largest fluid coker, this structure was built of PREPAKT concrete. This was at Tidewater Oil Co.'s Avon Flying A Refinery, Associated, Calif.

The space frame was designed with 900 tons of reinforcing to provide strength to take the tremendous equipment and earthquake loads. Placing mass concrete among the maze of 2¼-in. bars during hot summer weather posed problems which could not be solved with conventional concrete—controlling shrinkage; avoiding honeycomb, voids and segregation; and preventing thermal cracking.

These were solved by (1) using the INTRUSION-PREPAKT method of placing concrete, (2) precooling all materials and (3) using dense, low-absorptive aggregate. Tons of crushed ice melted through the preplaced aggregate to chill it before it was consolidated with cold INTRUSION mortar. This cooling plus point-to-point contact of the aggregate minimized shrinkage.

This high-strength space frame was placed in three lifts . . . and demonstrates the remarkable results achieved by INTRUSION-PREPAKT, specialists in concrete construction and maintenance. For information, write: INTRUSION-PREPAKT, Inc., Room 779-P, Union Commerce Bldg., Cleveland 14, Ohio. In Canada: INTRUSION-PREPAKT, Ltd., 159 Bay St., Toronto, Ontario.

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Intrusion and Prepakt are trade marks of Intrusion-Prepakt Inc. whose methods and materials are covered by U.S. Patents Nos. 2313110, 2655054, 2434302 and others. Also patents pending.

ACI

News Letter Contents

September 1956

On the Cover—Multistoried reinforced concrete office building and automobile showroom built for Atkinson's Ltd., Cape Town. Completed in 1953, the building was designed by architects L. L. Small and Green. The consulting engineer was S. K. Jordan, and contractor was P.W.A. Construction Co.

Courtesy Concrete Association of South Africa

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MONTREAL PROGRAM

advance announcement of schedule for Regional Meeting papers . . .

First Session—October 24

Effect of Sand Grading on Air Entrainment	Jean Chartrand
Heavy-Media Processing of Aggregates	I. D. Mackenzie
Scaling of Montreal Sidewalks	W. S. Weaver D. O. Robinson

Second Session—October 24

Prestressed Concrete	T. O. Lazarides
Prestressed Concrete	Philippe Benn
Lift-Slab Construction	W. Sefton
Bridge Design	Edgar Gilbert

Third Session—October 25

Calibration and Use of Impact Hammers	N. G. Zoldners
Flexural and Shear Tests of Pretressed Beam	R. A. Banks G. A. Jacobsen
Concreting Operations on St. Lawrence Seaway	J. C. Kingston Harry H. McLean

Fourth Session—October 25

SYMPOSIUM: Winter Construction

Moderator:	R. E. Heartz
Panel Members:	H. F. Cook, E. G. Swenson, Wilfred Schnarr, H. John Racey

October 26 and 27

Inspection Trips	St. Lawrence Seaway sites Montreal industrial plants

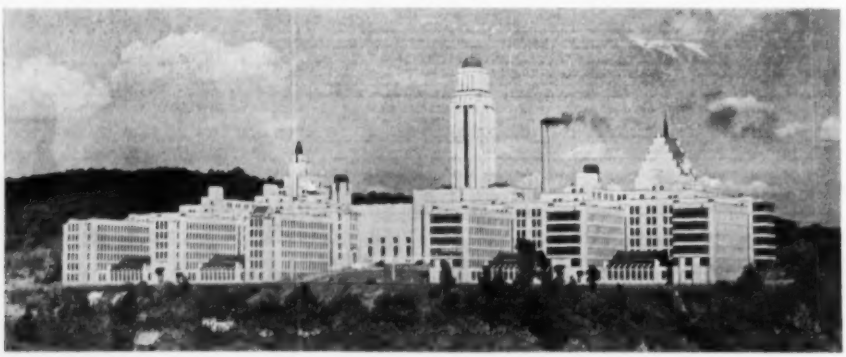
A panorama of central Montreal from Mount Royal lookout, with the St. Lawrence River and 2-mile Victoria Bridge in the background. Right center is the Sun Life building, Canada's largest office building

The ACI 9th Regional Meeting will be held in Montreal on Oct. 24-25, 1956, at the Sheraton-Mount Royal Hotel.

The program's technical sessions (listed on p. 3) will present papers of particular interest to the northeastern states and eastern Canada. The following two days will be devoted to inspection trips. For the morning of October 26, trips are scheduled to different construction sites of the Montreal section of the St. Lawrence Seaway. The afternoon will feature visits to plants in the area, *e.g.*, cement mill, quarry, and concrete plants. An all day trip is scheduled October 27 to the international section of the St. Lawrence Seaway at the power development site at Barnhart Island.

Gerald Milsom, president, Metallicrete Floor Co., Ltd., heads the regional committee on arrangements; secretary is D. F. Nash, sales manager, Dewey and Almy Chemical Co.; treasurer is G. R. Rinfret, chief engineer and vice-president, Shawinigan Engineering Co.; technical program director is M. F. Mac-

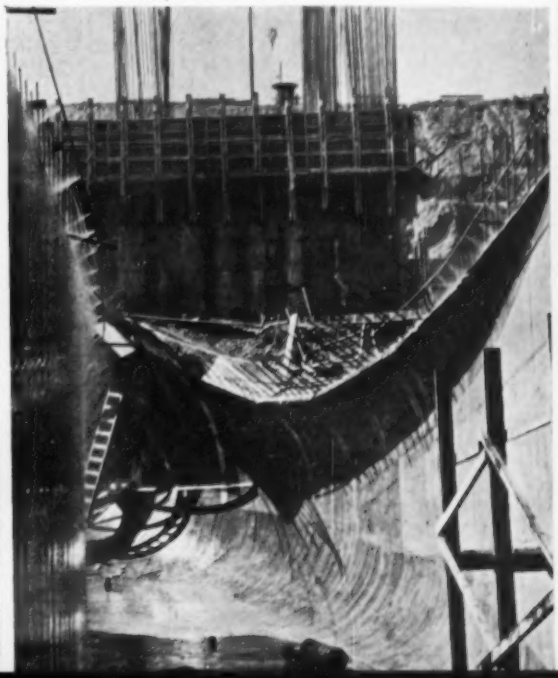
Main buildings of the University of Montreal built in the early 1930's were designed by Ernest Cormier, architect and engineer. The beam and slab construction required 42,000 cu yd of concrete to enclose a total building volume of 14,000,000 cu ft. Additional reinforced concrete construction now in progress on campus will house the Ecole Polytechnique and provide student dormitories

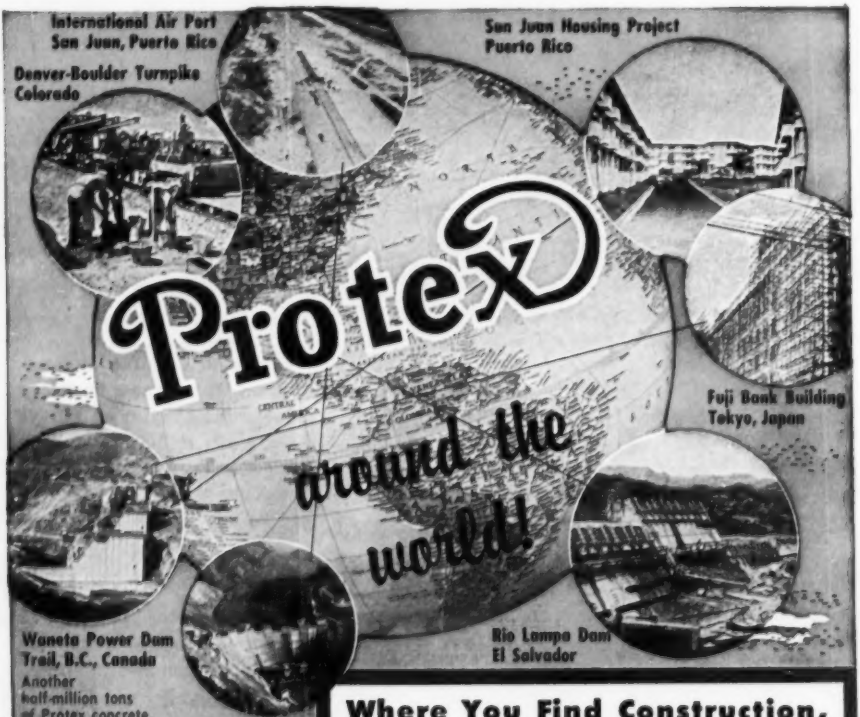


Naughton, vice-president, Mount Royal Paving and Supplies, Ltd., all of Montreal. Roger O. Beauchemin, J. A. & Associates, Montreal and Henri Isabelle, Canada Cement Co., Montreal, will be in charge of publicity.

Other committee members are: Registration and entertainment: James H. Royds, Drew Brown, Ltd., and G. J. MacHutchin, Diamond Flooring, Ltd., Inspection trips: H. Fred Senez, Mount Royal Paving and Supplies, Ltd.; Ladies committee: Byron T. Kerr, Warnock-Hersey Co., Ltd.; Membership promotion: S. E. Acker, Creaghan and Archibald, Ltd.; Educational Contacts: J. F. Brett, Montreal Public Works Department; Finance: H. C. Pearson, Dewey and Almy Chemical Co., and E. P. Hersey, Warnock-Hersey Co., Ltd.; E.I.C. representative: E. R. Smallhorn, consulting engineer; Toronto representative: D. O. Robinson, Canada Cement Co.; Ottawa representative: J. W. Lucas, Department of Public Works, Ottawa; Quebec City representatives: E. A. Dupuis, Public Works Department, Quebec, and E. Gilbert, Public Works Department, Government Buildings, Quebec; P.Q.A.A. representative: Colin H. Copeman; General committee: S. L. Burns, Donald Inspection, Ltd.; L. H. Burpee, St. Lawrence Seaway Authority; A. L. Campbell, Canada Cement Co.; G. A. Campbell, Pentagon Construction Co., Ltd.; R. M. Doull, Preload Co. of Canada; Walter Griesbach, Foundation Co. of Canada, Ltd.; L. B. McCurdy, Dominion Structural Steel, Ltd.; W. L. Pugh, Aluminum Co. of Canada, Ltd.; W. McG. Gardner, Montreal Transportation Commission.

The October 27 tour will visit Barnhart Island Power House, near Messina, N. Y., which will one day be the second largest hydroelectric plant in the U. S. Views here show concreting operations on one of the main piers. On the left, timber supports are in place for steel draft tube form inside the pier. On the right is the same draft tube and pier after form removal. In forming the 97-ft tubes, the contractor, B. Perini & Sons, places the contoured slab first, followed by the two intermediate piers. Then the discharge main piers, which constitute the inner wall of the draft tube, are formed and cast. Steel forms were supplied by Blaw-Knox Co.

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Waneta Power Dam
Trail, B.C., Canada
Another half-million tons of Protex concrete, where climatic changes are severe and placement difficult. Protex was specified specifically for this 250' high project.
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Over 3 million cu. yds. of Protex concrete, selected for its consistent controlled air quality and proven economy, with no yield loss in placed concrete. Comparative tests at the project proved that, regardless of claims or names, none were as effective as PROTEX.
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Protex membrane curing compound excels latest Government specifications U.S.E.D.—C.R.D.—300-52. Reliability—quality—reasonable price are its chief advantages.

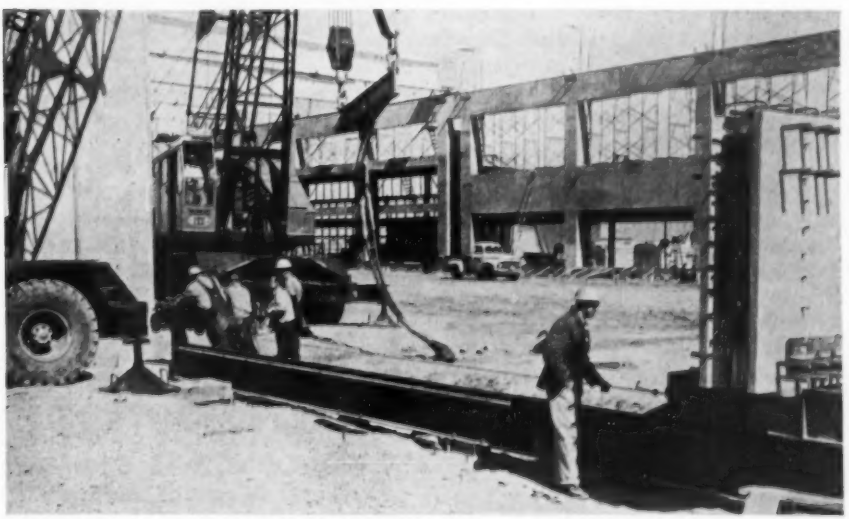
AIR FORCE HANGAR

uses 136-ft precast beams

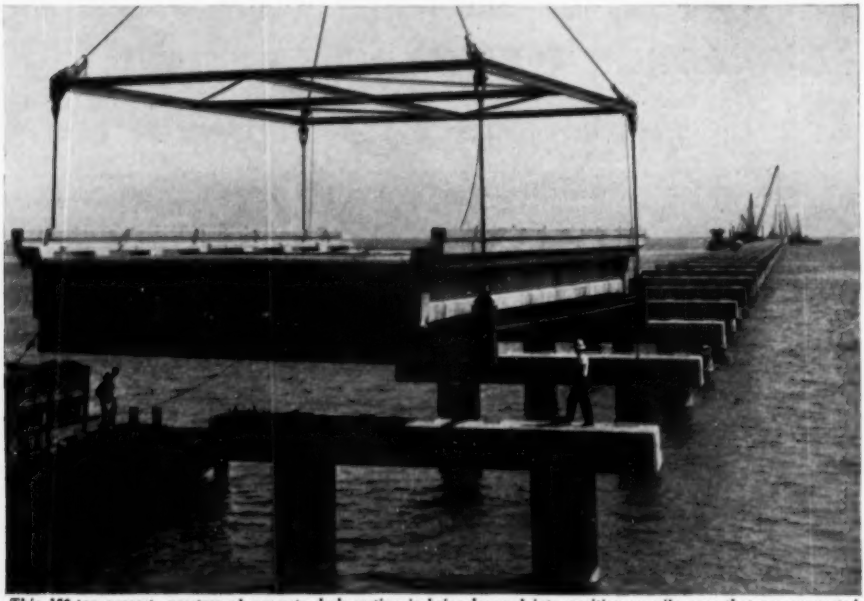
Air force installations engineers approved the use of 84-ton precast, post-tensioned girders as a part of the rigid frame design of a $2.5 million cleaning and painting hangar at Hill Air Force Base, Ogden, Utah. The use of the hangar was a major factor in selection of its design. Air flow was considered extremely important since large quantities of toxic fumes from cleaning agents and paints must be controlled and dissipated. A suspended ceiling was believed desirable. Cost analyses indicated that a structural steel truss building with a suspended ceiling would have been 1 percent cheaper than the adopted concrete design, but the additional cost of a prestressed rigid frame installation with suspended ceiling was considered justified in view of lower maintenance cost, permanence, and greater fire resistance.

The main work space of the hangar is 274 ft x 130 ft, divided by rail-mounted doors into two sections, one for cleaning and one for painting. Shop structures on either side of the hangar provide space for offices and mechanical equipment, making the over-all width of the building 242 ft. However, these shop structures are independent of the hangar footings and precast beams.

Casting—The girders are 6 ft 4 in. high at the ends and 7 ft 6 in. high at the center. Measuring 136 ft, with a free span of 130 ft, they weigh 84 tons each. They were cast as simple beams in a casting yard set up near the hangar, with work beginning in September 1955. Concrete was mixed on the job only a few feet from the girder casting position. The concrete was vibrated by external machines until it covered the prestressing reinforcement units, and then internal vibration was used. The last of the girders were cast in late December. During freezing weather they were protected



Rails permit lateral movement of girders from casting yard to hoisting point. Rails are mounted on 18-in. I-beams placed on a concrete slab



This 180-ton precast, prestressed concrete deck section is being lowered into position on pile caps that are supported on hollow 54" prestressed piles. There are 2,235 of these deck spans on the 24 mile causeway across Lake Pontchartrain near New Orleans.

Why They Used Plastiment in the World's Longest Highway Bridge...

Efficient single unit beam-and-deck design and economical mass production are outstanding features of this 24 mile causeway across Lake Pontchartrain. Each day eight 56 foot deck-spans are cast in a single bed containing pretensioned wires.

Plastiment Concrete Densifier is being used for these reasons:

UNIFORM HIGH QUALITY YEAR AROUND — During cooler weather the minimum quantity of Plastiment is used for highest structural quality. More Plastiment is added in the hot summer to keep water content and setting time of concrete constant. Cracking and crazing are entirely eliminated.

HIGH EARLY STRENGTH FOR PRESTRESSING — Initial retardation allows time for placement and consolidation of the entire unit (89 cubic yards) even in the hottest weather. After this retardation, Plastiment concrete gains strength rapidly. Steam curing for 15 hours accelerates this gain. At three days, strength averages well above 4000 psi.

ECONOMY — An economical 6½ bag concrete mix, with varying proportions of Plastiment, results in uniform high structural quality well above specifications. Ease of placement and compaction, a characteristic of low slump Plastiment concrete, reduces placing costs.

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Mobile, Alabama

Contractor: Louisiana Bridge Company —
A joint venture:
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T. L. James Co., Inc. — Ruston, Louisiana

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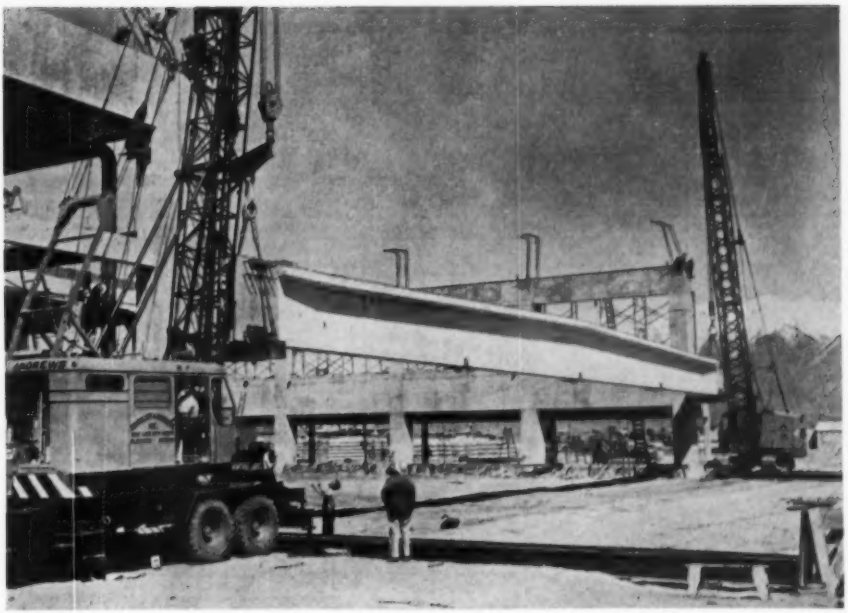

Eighty-four-ton precast girder is hoisted to roof level of cleaning and painting hangar by a 50-ton crawler crane at one end and two truck cranes using a balanced beam at the other end. Only one of the latter cranes is visible

while curing with canvas coverings and lanterns. Those cast before freezing weather had their forms off in 2 days, and a curing compound was immediately applied. Beams were cured in the forms after freezing weather developed. Forms were plywood faced, braced on the outside by light steel frames. The contractor assembled two sets of girder forms and installed two casting positions. Concrete slabs were laid to support the casting work.

Stressing—Post-tensioning of the girders was accomplished in two stages. After 7 days curing, with the concrete at 4000 psi strength, the girders were tensioned to about 65 percent of ultimate full stress. After the girders were erected, with the roof slabs in position, they were fully tensioned. This two-stage tensioning was used to prevent overstress in the bottom of the girders, and to assure an upward pull from the girders to counter-balance the weight of the roof slabs. The dead load supported by each of the interior girders is 72 tons, imposed by ribbed roof slabs weighing 6 tons each.

Erection—Horizontal movement of the big girders proved almost as difficult as lifting operations. During casting operations standard railroad tracks were placed at each end of the girder. Rails were mounted on 18-in. I-beams that rested on a concrete slab. After stressing, each girder was jacked up and placed on dollies (see illustration) so it could be winched along the rails to a spot near the hangar until time to be lifted. Here the girders rested on steel pedestals which were later installed at the top of the walls for the girders.

A 50-ton crane was used for hoisting at one end, and two mobile 35-ton cranes, using a balanced beam, at the other. At roof level the girders were horizontally moved by about the same rail procedure as on the ground. Prior to lifting opera-

Two 35-ton truck cranes settle one end of 84-ton precast concrete girder onto rails installed along top of hangar wall at Hill Air Force Base. Lifting sling is pinned to dolly that moves the girder along rails into position. Ten such beams were used in hangar's roof design

tions, tracks were installed on the spandrel beams at the top of the hangar walls. When the girders reached roof level, the cranes lowered them onto dollies positioned on the tracks, and they were winched along into position. Winching problem was to keep the ends of the girder moving at the same speed to prevent a skew alignment. Once a beam reached the proper point along the hangar walls, it was jacked up for the removal of the dollies, then lowered onto its pedestals, and the cranes were made ready for the next lift.

Air Force administrator for the project was Col. Edwin M. Eads, AF Installations Representative, South Pacific Region. Design of the hangar was by Roberts and Schaefer Co. of Chicago and New York. Construction supervision and contracts were handled by the South Pacific Division, Corps of Engineers. Jacobsen Construction Co. of Salt Lake City was the contractor.

BRAB completes studies

The Building Research Advisory Board, Washington, D. C., has completed its studies for the Federal Housing Administration. Reprints of the reports will be available at $1.50 each from the Building Research Institute, 2101 Constitution Ave., Washington, D. C. Some of the titles (with publication series numbers assigned by the National Academy of Sciences) are as follows: NAS 445 "Vapor Barrier Materials for Use with Slab-on-Ground Construction and as Ground Cover in Crawl Spaces," reported on elsewhere in this News Letter; NAS 446 "Anchorage of Exterior Frame Walls to Various Types of Foundations"; and NAS 447 "Cracking of Concrete Face Brick and the Development of Data Necessary for the Establishment of Criteria for Its Manufacture and Installation."

The first of this series, "Slab-on-Ground Construction for Residences," was published last year as NAS 385.

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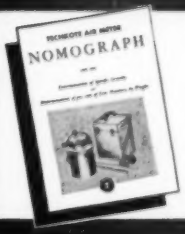

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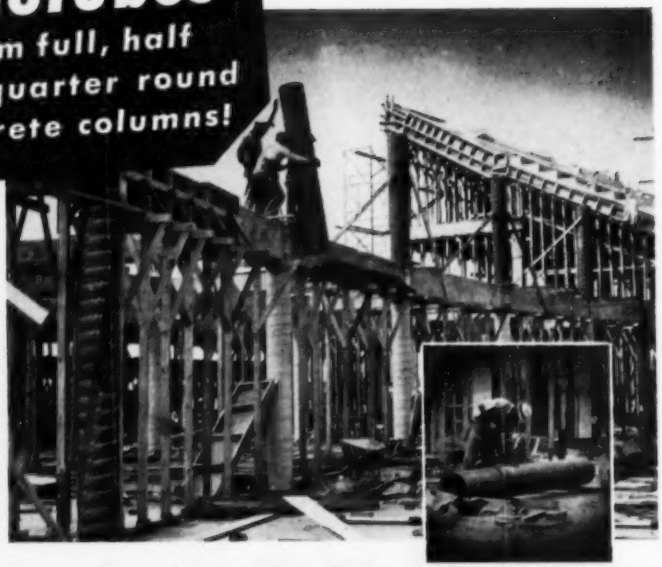

Kentucky State Fairgrounds and Exposition Center, Louisville, Ky. Fred Elswick & Associates, architects and engineers. Robert Simmons Construction Co., contractors.

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In this construction, many round concrete columns of varying diameters and heights were erected as well as half-round and quarter-round columns. SONOTUBES also permitted the integration of the concrete beams with the columns. SONOTUBES were selected for the formwork because they can be easily sawed on the job to required lengths as well as to the required shapes for other than full round columns. SONOTUBES are easily handled because they are lightweight and easily erected because they require minimum bracing. SONOTUBES save time, labor and money.

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Positions and Projects

Goldbeck retires as NCSA engineering director; succeeded by Gray

Albert T. Goldbeck retired as engineering director of the National Crushed Stone Association in August after 31 years of continuous service with that organization. Joseph E. Gray, field engineer since 1945, will succeed Mr. Goldbeck, who will continue with the association as engineering consultant.

Mr. Goldbeck graduated from the University of Pennsylvania with a BS in civil engineering in 1906 and a CE degree in 1923. He became engineering director of the National Crushed Stone Association in 1925, after acting as chief of the division of tests and research, Bureau of Public Roads.

For many years Mr. Goldbeck has served the American Concrete Institute in various capacities. He was a member of the Advisory Committee, 1922-25; Publications Committee, 1944-46; Board of Direction, 1948-49; Vice-President in 1950-51; and President in 1952. In 1951 he received the distinguished service award of the Highway Research Board.

Mr. Gray has been connected with NCSA since formation of its research laboratories in 1928, serving as testing engineer in charge of investigations on uses of crushed stone. He holds BS and CE degrees from George Washington University, Washington, D. C. Prior to joining the association, Mr. Gray served at the National Bureau of Standards and the Bureau of Public Roads. He has been an ACI member since 1950.

Frazier appointed production manager

Richard J. Frazier has been appointed production manager of Anchor Concrete Products, Inc., Buffalo, N. Y. Mr. Frazier will also have charge of the company's research, new product development, and quality control programs. A civil engineering graduate of the Catholic University of America, Washington, D. C., he was formerly plant manager and research and development engineer for the Washington Brick Co., Washington, D. C.

Lectures on concrete announced

Changes in concrete building design standards and latest developments in thin concrete shell roof construction will be discussed in a series of nine weekly lectures scheduled to begin this month in Detroit. ACI will join with the Portland Cement Association, University of Detroit, and Wayne State University in sponsoring the seminar sessions. The first meeting will review recent ACI Building Code revisions in flat slab design and eccentrically loaded columns, together with altered shear and load test requirements. The following three public lectures will cover Code changes recognizing ultimate strength design, and the final five meetings will emphasize advances in thin shell concrete roof construction.

High strength reinforcement studied at Cornell

Additional information received on the Reinforced Concrete Research Council's program states that the investigations at Cornell University are on high strength steel, not medium strength steel as reported in the June News Letter, p. 6.

Easterly receives award

Harry W. Easterly, Jr., executive vice-president and general manager, Concrete Pipe and Products Co., Richmond, Va., recently was presented the 1955 Distinguished Service Award of the Richmond Junior Chamber of Commerce for "outstanding civic service to the community."

PROFESSIONAL CARD

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Giffels & Vallet and Rossetti honored

The Continental Division Plant of the Ford Motor Co., designed by Giffels & Vallet, Inc., and L. Rossetti, Associated Engineers and Architects, has been selected by *Factory Management* for a special award in its annual design competition.

Referring to the Continental operation at Ecorse, Mich., as "a noteworthy advancement in industrial plant design," the publication also commends the management of the division for "its unusual achievement in incorporating advanced methods and concepts in this new facility."

Dore appointed chief engineer

Stanley M. Dore has been appointed chief engineer, New York City Board of Water Supply. He has been deputy chief for the past 4 years.

Concrete wind tunnel

Construction has begun on a wind tunnel for automobile testing at the research and engineering center of the Ford Motor Co., Dearborn, Mich. The tunnel, capable of developing air speeds up to 125 mph, will be built of reinforced concrete and lined with a prefabricated sandwich of aluminum-faced, cellular insulation. Designer is Burns and Roe of Michigan, Inc.

New offices for PCA

The Portland Cement Association has announced the opening of a new regional office in Los Angeles, and new district offices in Baltimore, Md., Trenton, N. J., Portland, Me., and Louisville, Ky. Hugh Barnes, who has been district engineer at Los Angeles since 1942, will head the new office there as regional manager. John M. McNerny succeeds Barnes as district engineer.

Four field engineers for the association have been advanced to district engineer to take charge of the new district offices. The Portland office, serving Maine, Vermont and New Hampshire, will be headed by Daniel Webster. The Trenton office will be under the supervision of Albert L. Blackwell. William J. Moore will be in charge of the Baltimore office, and J. J. Farra will direct association activities in Kentucky from the Louisville office.

Ospina receives award

Carlos S. Ospina, Bogota, Colombia, has been awarded the National Engineering Prize for 1956 by the Colombia Society of Engineers, for a report by Mr. Ospina and Hernando Quijano on the development of the Guadalupe River for power. Mr. Ospina is a partner in the engineering firm of Olarte, Ospina, Arias & Payan Ltd., Bogota, and Mr. Quijano, a principal associate.

Van Zelst visits South America

Theodore W. Van Zelst, president, Soiltest, Inc., Chicago manufacturer of engineering test apparatus for soils, concrete, and asphalt, recently returned from South America, where he visited his firm's sales representatives. While in Bogota, Colombia, he attended the opening of the new Ministry of Public Works Laboratory and presented a 2-day course in field and laboratory testing for 75 Colombian engineers.

Dayton joins Seelye staff

Cedric L. Dayton has joined the staff of Seelye, Stevenson, Value & Knecht, New York. Formerly he worked with Walsh-Fuller-Slattery on the New York Coliseum.

CLINTON WELDED WIRE FABRIC

. . . the concrete reinforcement that is low in cost and so easy to use

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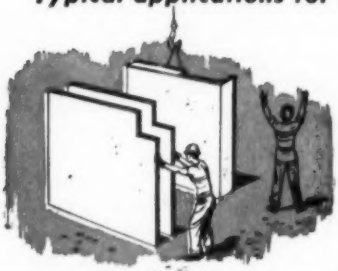

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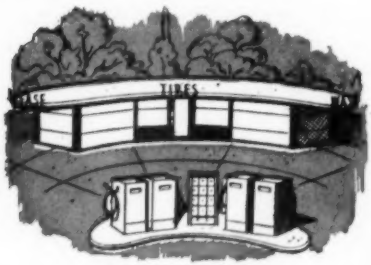

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John Fritz Medal awarded to Moreell

Award of the John Fritz Medal to Admiral Ben Moreell, chairman of the board of Jones and Laughlin Steel Corp., has been announced. World War II organizer and commander of the Navy's "Seabees," Moreell was characterized by the board of award as a "distinguished engineer and noted officer; builder of naval works in war, and in peace eminent industrialist and civic leader; devoted servant of church and country."

A past president of ACI (1941), he received the Wason Medal with Douglas E. Parsons and A. H. Stang in 1935 for studies of Mesnager hinges. In 1943 Admiral Moreell was awarded the Institute's Henry C. Turner Medal for "notable leadership in concrete design and construction. . . ."

Vapor barrier materials studied

The Building Research Advisory Board has completed a report entitled "Vapor Barrier Materials for Use with Slab-on-Ground Construction, and as Ground Cover in Crawl Spaces," containing recommendations on the properties required of such materials, test procedures that will reveal these properties, and recommendations concerning proper installation methods.

The report was prepared under a contract between the Federal Housing Administration and the National Academy of Sciences and may be used by the FHA in considering revisions applicable to the minimum property requirements. The BRAB special advisory committee recommended further research on:

1. Development of a recognized standard for satisfactorily testing vapor barrier materials for uses named in this report.

2. Development of test methods for determining water and water-vapor resistant properties and permanence of various coatings and admixture materials.

3. Development of more accurate data on measuring moisture migration caused by capillarity.

4. Development of data concerning the effects of soil poisons on vapor barrier materials.

5. Development of methods to assure permanent adhesion of vapor barrier materials to concrete slabs.

6. Development of data to establish more accurately the effective service life of vapor barrier materials.

Jahncke re-elected SCMA president

Herbert Jahncke, vice-president and treasurer, Jahncke Service, Inc., New Orleans, has been re-elected president of the Southern Concrete Masonry Association.

Intrusion-Prepakt appoints Murphy

Intrusion-Prepakt, Inc., Cleveland, has named Richard D. Murphy as manager of its newly established New England district office. Mr. Murphy will supervise field sales and construction activities.

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UNITED COMMUNITY CAMPAIGNS

ASTM meets in California

The second Pacific Area National Meeting and Apparatus Exhibit of the American Society for Testing Materials is scheduled for September 17-21 at Los Angeles. An anticipated 43 technical sessions with more than 200 papers make this the largest technical program in the society's history.

Bryant Mather will present "The Partial Replacement of Portland Cement in Concrete" at the session on concrete, September 20. Performance of prestressed members of expanded shale concrete will be discussed at the same session in a paper by R. E. Davis, G. E. Troxell, Don McCall, and R. A. McCann. Other scheduled items are: "A Statistical Method for Determining the Composition of Hardened Concrete," by J. W. Kelly, Milos Polivka, and C. H. Best; "California Field Experience with Pozzolans in Concrete," by F. W. Drury, Jr.; and a paper on relationship between aggregate quality and the abrasion resistance of concrete by F. L. Smith.

Albyn Mackintosh will discuss reinforced concrete masonry beams at the masonry session September 19, and J. A. Hester will deliver a report on alkali-aggregate reaction at the cement session the same day. Also scheduled on the cement program are the following: "Hydrophobic Cement," by U. W. Stoll; "Effect of Storage on Air-Entraining Cements," by W. J. McCoy and S. B. Helms; "Carbonation of Portland Cement," by George Verbeck; and a report by L. R. Pritchard, "Determination of Magnesia by Flame Photometry."

Ordway appointed director for PCA Fellowship

Hubert Woods, director of research for the Portland Cement Assn., Chicago, recently announced the appointment of Dr. Fred D. Ordway, Jr., as director of the PCA Fellowship at the National Bureau of Standards, Washington, D. C. Dr. Ordway has been acting director of the fellowship since 1954, following the retirement of Dr. R. H. Bogue.

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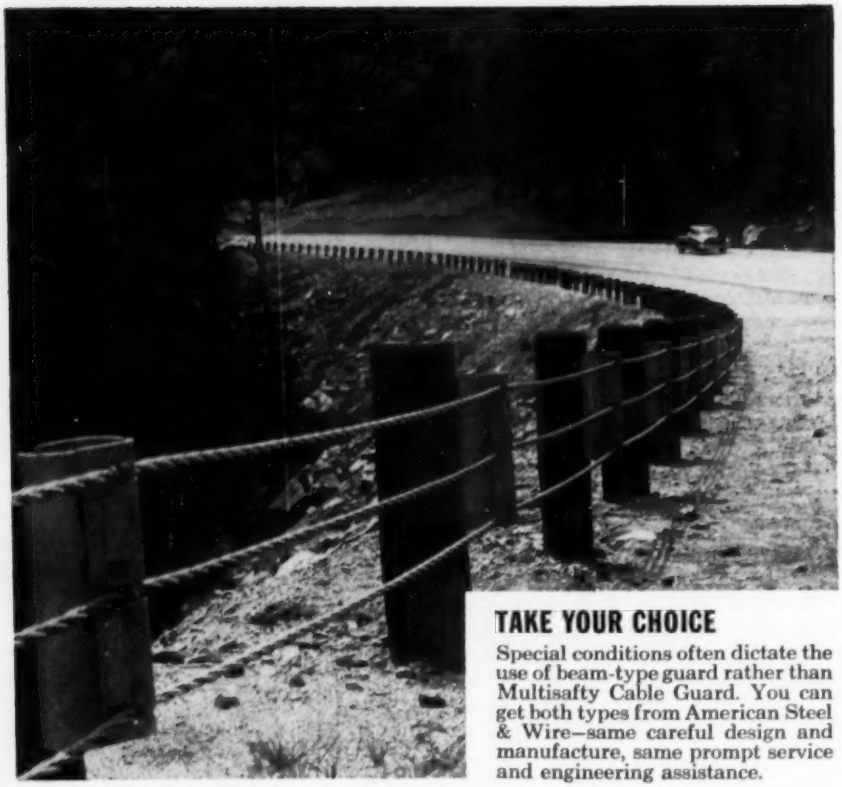

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Vranich joins Strass

Emil F. Vranich, structural engineer, recently joined Robert J. Strass, Inc., Professional Engineers, as vice-president. Mr. Vranich was formerly structural engineer in the City of Milwaukee Bureau of Bridges and Public Buildings, and had been associate engineer with several Milwaukee firms.

Minerals research by Bureau of Mines

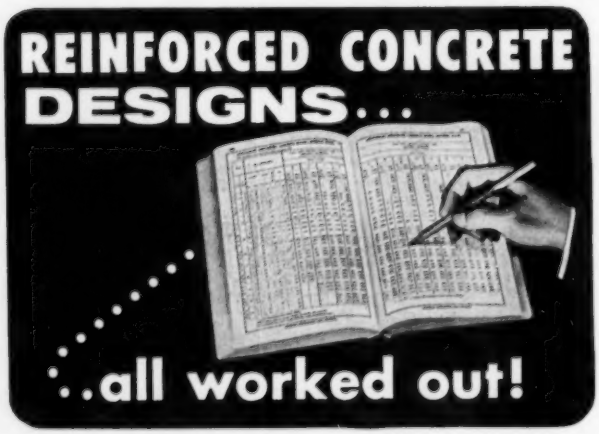
Intensified nationwide research in metals and nonmetals essential to defense and industrial progress has been provided for in the $22 million appropriation for the U. S. Bureau of Mines for 1957. Funds are available for conducting field studies and for maintaining experiment stations and laboratories in 27 states and Alaska.

Bureau officials expect to step up research in every phase of mining operations, in cooperation with existing industry and research organizations. The program will include investigations on methods and costs of mining all non-fuel minerals, research on rock mechanics, drilling and blasting, studies of ore-sampling theories and practices, and area studies of major mineral resources.

Broadened research by the bureau will aid in the anticipated expansion of the mineral aggregates industry. Aggregate studies scheduled for the 1957 fiscal year include mining, blasting, and processing techniques, and waste disposal methods.

PCA elects Tongue

Gordon Tongue, president of Northwestern Portland Cement Co., Seattle, has been elected to the board of directors of the Portland Cement Association. Mr. Tongue has been associated with the cement industry of the Pacific Northwest since 1913. He fills a vacancy on the association's board created by the resignation of Chester M. Reitze, former president of Superior Portland Cement, Inc., Seattle.



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Ernst resigns chairmanship

Prof. George C. Ernst has resigned from the chairmanship of the civil engineering department at the University of Nebraska, Lincoln, to devote full time to teaching and research at the university. He is currently in charge of an investigation of reinforced concrete in the plastic range of loading, sponsored by the National Science Foundation, the University Research Council, and the University Foundation. Prof. A. R. Legault succeeds Professor Ernst.

Uitti leads alumni

George I. Uitti was recently installed as president of the Michigan College of Mining and Technology Alumni Association. Mr. Uitti is president and structural engineer of Thomas J. Higgins Associates, Inc., Chicago.

Haertlein honored

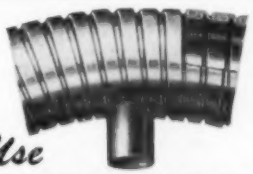
Albert Haertlein, associate dean of engineering and applied physics at Harvard University, was recently elected to honorary membership in the American Society of Civil Engineers. Mr. Haertlein was formerly a director and vice-president of the society.

Bodwell appointed assistant chief engineer

Russell S. Bodwell recently was appointed assistant chief engineer, Union Building & Construction Corp., Passaic, N. J. He formerly was associated with Porter, Urquhart, McCreary & O'Brien, Newark, as project manager on the New Jersey and Connecticut turnpikes, and as soils and paving engineer on other turnpike projects.

Burnham appointed by Universal Atlas

The appointment of William W. Burnham as assistant sales manager of the Philadelphia sales territory of Universal Atlas Cement Co. was announced recently by Fred L. Wagner, vice-president, sales, eastern region. Mr. Burnham worked previously at Dayton, Ohio.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Errata

The following correction should be made in "Earthquake Resistant Design Based on Dynamic Properties of Earthquakes," by G. W. Housner, in the July JOURNAL.

p. 96—The heading of column (3) Table 2 should be $W\bar{x}$.

* * *

The following corrections should be made in "Structural Design Considerations for Pavement Joints," reported by Subcommittee III, ACI Committee 325, in the July JOURNAL.

p. 8—Crack shown in formed groove type of joint should extend above deformed tie bars to sealing compound.

p. 9—Line three of third paragraph should read in part "they should have," in place of "they must have."

p. 21—In Fig. 10, legend for uppermost curve should read RATIO f_b'/f_c'. For the curve labeled ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE IN MARCUS TESTS the notation following should be (f_c')

Jackson receives medal

James O. Jackson, vice-president and director, Pittsburgh-Des Moines Steel Co., Pittsburgh, is the 1956 recipient of the Marston Medal at Iowa State College, Ames. The medal is awarded to outstanding engineering alumni of the college. A 1917 graduate of Iowa State, Mr. Jackson has been employed by the Pittsburgh-Des Moines Steel Co. since his graduation. For the past 30 years he has been in charge of all engineering activities of the company. His work has involved the design of many hundreds of elevated steel water tanks, steel bridges, steel buildings, elevated spherical liquid and gas storage tanks, wind tunnels, and double-shell insulated low-temperature storage tanks.

Wilsnack honored

George C. Wilsnack, director of research, Ideal Cement Co., Denver, recently was awarded an honorary Doctor of Science degree from the University of Denver for his contributions as a "searching scholar, skilled scientist and eminent researcher." A graduate of Armour Institute of Technology, Chicago, with a degree in chemical engineering, Dr. Wilsnack joined Ideal Cement Co. in 1942 as general chemist and later became director of research.

Ernest W. McMullen

Ernest W. McMullen, partner, Ganteaume & McMullen, engineers and architects, Boston, died recently. He had been associated with Mr. Ganteaume since 1937 and prior to that was executive engineer with Monks & Johnson, Boston architects and engineers, for 24 years.

During World War I he organized and had complete charge of a large drafting organization that designed such structures as the destroyer plant, Squantum, Mass.; shipways at Sparrows Point, Md.; Liberty Shipbuilding Yard, Wilmington, N. C.; and the Alameda plant of Bethlehem Shipbuilding Corp. Mr. McMullen was chief of the Northeast Division of the Corps of Engineers for 2 years during World War II. He had been an ACI member since 1935.

Langdon Pearse

Langdon Pearse, sanitary engineer of the Metropolitan Sanitary District of Greater Chicago, died recently. His record of 47 years of service with the sanitary district included significant pioneering work in the activated sludge process, which formed a basis for the design of the district's treatment works.

A prolific writer for technical publications, and an active member of many professional groups, Mr. Pearse was one of the founders of the Federation of Sewage and Industrial Wastes Association. An Institute member since 1914, he had served as chairman of ACI Committee S3, Reinforced and Plain Concrete Sewers and Conduits, and ACI Committee E8, Expansion Joints in Concrete Construction.

Roy N. McCandless

Roy N. McCandless, president, Turner Gravel Co., San Antonio, Texas, died recently. A member of ACI since 1939, Mr. McCandless was also a member of the National Concrete Masonry Association and the National Ready Mixed Concrete Association.

F. O. Anderegg

Dr. F. O. Anderegg, internationally known authority on construction materials, died early this year. Formerly a professor of construction materials at Purdue University, for many years he was director of building materials research, John B. Pierce Foundation, Raritan, N. J.

He had been a member of ACI since 1948 and a member of ACI Committee 616, Recommended Practice for the Application of Paint to Concrete Surfaces. At the time of his death, Dr. Anderegg was consulting specialist on building materials.

Honor Roll

February 1—July 31, 1956

Heading the Honor Roll again this month is Jose L. Capacete with 31 credits. Federico Barona de la O is second with 10, and W. H. Armstrong and James A. McCarthy are tied in third place with 8 credits. Phil M. Ferguson and Jacob J. Creskoff each have 6.

Member efforts have proved to be the best source of introducing new members to YOUR Institute. Let's help others who are actively interested in the concrete field share in the benefits derived from membership in ACI.

Jose L. Capacete	31
Federico Barona de la O	10
W. H. Armstrong	8
James A. McCarthy	8
Phil M. Ferguson	6
Jacob J. Creskoff	6
S. E. Acker	5
George F. Bishop	5
George M. Brief	5
J. W. Kelly	5
George L. Blanchard	4
Arthur N. L. Chiu	4
Samuel Hobbs	4
Charles W. Payne	4
Walter H. Price	4
Harry C. Saxe	4
Howard Simpson	4
Ellis S. Vieser	4
Koker Al-Asady	3
W. S. Burke	3
Daniel M. Cashdan	3
M. A. Craven	3
E. L. Howard, Jr.	3
Masatane Kokubu	3
L. M. Legatski	3
Ignacio Martin B.	3
Newlin D. Morgan, Jr.	3
Gene M. Nordby	3
H. C. Pfannkuche	3
Constantin Policroff	3
C. H. Scholer	3
K. E. Whitman	3
G. W. Bernard	2
S. L. Burns	2
T. J. Cavanagh	2
Howard F. Christensen	2
Miles N. Clair	2
Anthony J. Costanza	2
Claudio Creamer G.	2
Clayton M. Crosier	2
Roger D. deCossio	2
Julius Dorfman	2
William M. Dreisig	2
William J. Eney	2
Gordon P. Fisher	2
Donald R. Frost	2
J. Guillermo Galvan	2
Gerald K. Gillan	2
Martin J. Gutzwiller	2
Myle J. Holley, Jr.	2
H. N. Howe	2
M. W. Huggins	2
J. E. Jellick	2
Henry L. Kennedy	2
M. H. Kubba	2
Federico Leon	2
Arthur A. Levison	2
John B. McConville	2
R. H. Mahimtura	2
George T. Mahoney	2

Continued on p. 25

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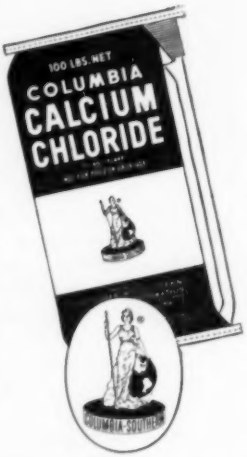

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Continued from p. 23.

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L. J. Meszaros 2
A. F. Moore 2
Chia Muktabhant 2
Henry L. Neve 2
Adrian Pauw 2
Abdur-Rahman S. Rasul 2
Leo E. Rivkind 2
Melchor Rodriguez C. 2
C. W. N. Sexton 2
Theodore Sheafer 2
Mandrup Skeie 2
Murray Slater 2
Delbert Smith 2
G. B. Southworth 2
Ralph E. Spears 2
John Steinbrugge 2
L. J. Sullivan 2
Emin Veral 2
Joseph J. Waddell 2
Thomas J. Whitten 2

MEADOWS BUILDING

framed in concrete

Photographs courtesy Lone Star Cement Corp.

Dallas' first major office building to be erected outside the central business district is the colorful Meadows building recently completed. The building consists of three separate structures surrounding one of the largest elevated gardens in the country. The main structure (shown during construction on the right) is nine stories high, framed with reinforced concrete. Two lower wings have been designed for future upward expansion. Unusual roof treatment seen in view of completed building above uses bright red, blue, and yellow crushed marble to make the building a landmark from the air as well as the ground

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Permalite Processed by: Perlite Manufacturing Co., Carnegie, Penna.

Who's Who This Month

A. C. Scordelis, K. S. Pister, and T. Y. Lin

"Strength of a Concrete Slab Prestressed in Two Directions," p. 241, is the joint contribution of A. C. Scordelis, K. S. Pister, and T. Y. Lin, University of California, Berkeley.

A civil engineering graduate of the University of California, Professor Scordelis served as an officer in the U. S. Army Corps of Engineers during World War II. After graduation he worked as a structural designer for the Pacific Gas and Electric Co., and later attended MIT, where he received an MS in civil engineering in 1949. He then joined the faculty of the University of California, and has worked as an engineer for Ernest J. Kump, architect, and for Bechtel Corp. at various times since 1949.

A member of ACI, ASCE, and ASEE, Professor Scordelis is faculty adviser to the ASCE student chapter at the University of California.

Dr. Pister received a BS in civil engineering from the University of California, served in the U. S. Navy Civil Engineer Corps and in 1946 returned to the University of California for graduate work. Receiving his MS in 1948, he served as lecturer and instructor in civil engineering from 1947 to 1949. In 1949 he became an instructor in theoretical and applied mechanics at the University of Illinois, while pursuing graduate work in that department. He received his PhD in 1952.

Dr. Pister then rejoined the faculty of the University of California where he has specialized in structural mechanics. A member of ASCE and ASME, he is currently conducting research on strength of concrete under combined stresses in collaboration with Prof. Boris Bresler.

Dr. Lin, after graduating from Chiao-tung University, China, received his MS in civil engineering at the University of California in 1933. Returning to China he worked with the Chinese National Government Railways, becoming chief of design and planning for the Yunnan-Burma Railway. In 1946 he joined the faculty of the University of California.

An ACI member since 1950, Professor Lin is a member of ACI Committee 314, Rigid Frame Bridges, and joint ACI-ASCE Committee 323, Prestressed Reinforced Concrete. He and Professor Scordelis are currently collaborating in research on shear strength of prestressed slabs and sudden failure of beams under excessive prestress.

E. R. Crocker

E. R. Crocker, project manager, Cachuma Project, U. S. Bureau of Reclamation, Goleta, Calif., tells about "Lining of the Tecolote Tunnel," p. 257.

Mr. Crocker entered the service of the Bureau of Reclamation in 1909 and except for two brief periods totaling 9 months he has been continuously employed by that organization. From 1909-27 he worked in Montana, Washington, and Oregon on all phases of field activity, including surveys, inspection and supervision of canal and lateral construction, and investigation of potential reclamation projects.

From 1927-48 he worked in the office of the chief engineer, U. S. Bureau of Reclamation, Denver. During practically all of this time he was assistant chief of the canal engineering division, responsible for the preparation of designs for all canals, canal structures, concrete pipe lines and siphons, diversion dams, and bridges.

Mr. Crocker has held his present position since 1948 and has had general supervision of all construction on the Ca-

chuma project, which includes Cachuma Dam, the Tecolote Tunnel, the lining of which is described in this issue, and the South Coast Conduit.

Bruce H. Falconer

"A Theory of the Stresses Induced in Reinforced Concrete by Applied Two-Dimensional Stress," p. 277, is presented by Bruce H. Falconer, senior structural engineer, Ministry of Works, Wellington, New Zealand.

Dr. Falconer received his BE from the University of New Zealand in 1943. After war service he studied at the Imperial College of Science and Technology, London, from 1947-49, and remained at the college for the next 3 years as an assistant lecturer engaged in experimental research on stressed-skin structures. In 1951 he received the diploma of the Imperial College and a PhD from the University of London.

In 1952 Dr. Falconer returned to New Zealand, one of the world's major earthquake areas, where he has since worked on the designs of concrete buildings. He is an associate member of ASCE, the ICE (London), and the NZIE.

I. Leber and F. A. Blakey

"Some Effects of Carbon Dioxide on Mortars and Concrete," p. 295, are described by I. Leber and F. A. Blakey.

Mr. Leber, formerly technical officer, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia, studied at the University of Graz, Austria, and later at Darmstadt, Germany. War interrupted his academic work, but afterward he graduated in chemistry from the University of Ljubljana, Yugoslavia. For some time he worked with the cement section of the Croatian Ministry of Building.

Dr. Blakey is officer-in-charge of the concrete and testing laboratory, Division of Building Research, Commonwealth Scientific and Industrial Research Organization, Melbourne. He graduated in 1945 with a BE from the University of Western Australia, Perth, with first-class honors in structural engineering. After 2 years as assistant lecturer in civil engineering at the University of Tasmania, Hobart, he was awarded the Hackett Traveling Studentship and went to Cambridge University where he received his PhD in 1949.

James M. Prentis

James M. Prentis, lecturer in engineering, Marischal College, University of Aberdeen, Scotland, is the author of "Analysis of Inelastic Bending Stress in Concrete Beams," p. 309.

Mr. Prentis graduated in 1944 from King's College, University of London, with first-class honors. He subsequently worked in the stress office of an aircraft manufacturing firm and later for a firm of civil engineering contractors. During the latter employment he was site engineer on the construction of a deep water quay at Edinburgh, Scotland, one of the first jobs in that country using the Freyssinet system of prestressing.

From early 1949 until the end of 1951 he was a research assistant in concrete technology, Imperial College of Science and Technology, London. Prior to this, during 1945-46, he studied the strength of long reinforced concrete columns at King's College, London, and obtained his MS.

In his present position at the University of Aberdeen, he is primarily concerned with teaching general applied mechanics. However, his interest in concrete continues, and recently he has done further experimental work on the ultimate bending strength of prestressed concrete beams.

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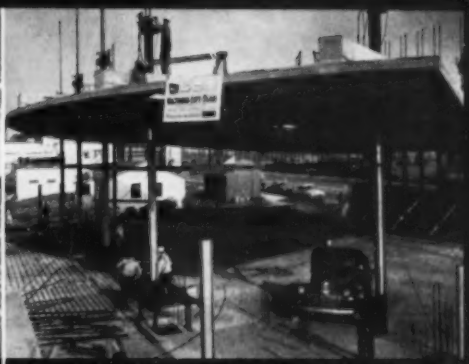
Marion, Indiana Sewage Treatment Plant. Engineer—Consoer, Townsend & Associates, Chicago, Illinois; Contractor—Steigerwald & Borchert, Milwaukee, Wisc.



Temple Isaiah, Los Angeles, Calif. Archt.—Kenneth I Lind, A.I.A.; Struc. Engr.—Brandow & Johnston; Cont —Zimmer Construction Co.; Sub Contr.—Vogtber Construction Co.—all of Los Angeles, Calif.

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New Members

The Board of Direction approved 66 Individual applications, 4 Corporations, 11 Juniors, and 6 Students making a total of 87 new members. Considering losses due to resignations, deaths, and nonpayment of dues, the total membership on August 1, 1956, was 7984.

Individual

AGRAIT, WILLIAM VAZQUEZ, Mayaquez, Puerto Rico (Instructor in Civil Engineering Dept., College of Agriculture and Mechanics Art)

ANDERSON, R. W., Boston, Mass. (Partner, Ganteaume & McMullen, Engrs., Archs.)

ANDERSON, RAYMOND W., Arcadia, Calif. (Struct. Engr., The Ralph Parsons Co.)

AYRE, ROBERT S., Baltimore, Md. (Assoc. Prof. and Chairman, Dept. of Civil Engrg., The Johns Hopkins University)

BANKS, PERCY HAROLD, Keston Mark, Kent, England (Chief Arch., Surveyor & Engr., The Whitbread Group of Companies)

BAYLOR, JACK W., New York, N.Y. (Chf. Foundation & Matls. Branch & Director of Div. Lab., Corps of Engrs., Med. Div.)

BENNETT, DENIS, J., Fareham, Hampshire, England (Director, Denis Bennett, Ltd.)

BENOIT, MARC, Montreal, Que., Canada (Office Engr., Supv., concrete structures, design, The Shawinigan Eng. Co., Ltd.

BLUMFIELD, C. V., Surbiton, Surrey, England (Cons. Engr.)

BUTCHER, NATHAN B., Salina, Kansas (Gen. Mgr., Wilson & Co., Engrs. & Archs.)

CASE, ALBERT DEERING, Philadelphia, Pa. (Chf. Struct. Engr., Edwards, Kelcey and Beck)

CATTANEO, LOUIS E., Hyattsville, Md. (Struct. Research Engr., National Bureau of Standards)

CHENG, DAVID H., Teaneck, N.J. (Asst. Prof., The City College of New York)

CIOLINO, SAMUEL JOHN, New Orleans, La. (Constr. Matls. Inspector, Ralph S. Holt Testing Lab.)

CROSS, GEORGE S., Grand Rapids, Mich. (Gen. Supt., Cross & White)

CRUMRINE, WALTER R., JR., Akron, Ohio (Mgr. Ready Mixed Concrete Plant, The Fairlawn Supply & Coal Co.)

CUEVAS BARAJAS, LUIS, Mexico City, Mex. (Ingeniero Residente, Torre Latino-Americana Seguros De Vida, S.A.)

DAVIS, PHILIP K., Cleveland, Ohio (Vice-Pres., The Austin Co.)

DEWALL, KENNETH L., Springfield, Ill. (De-Wall Concrete Products)

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FRANSEN, HARRY J., Cleveland, Ohio (Board of Building Standards and Building Appeals, member of Technical Staff of the Board and Acting Executive Secretary)

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GOLDSMITH, MYRON, San Francisco, Calif. (Head of Struct. Dept., Skidmore, Owings & Merrill)

GULICK, LT. CHARLES WARD, JR., Urbana, Ill. (CEC, USN., Civil Engineers Corps Officer)

HABAN, BASHIR, Karachi, Pakistan (Constr. Supt., Lower Sind Barage Administration, Public Works Dept., Govt. of West Pakistan)

HILDEBRAND, LEE ROY Z., St. Louis, Mo. (Struct. Engr., Russell & Axon, Inc.)

HOLST, FRIEDRICH, Hamburg, Germany (Cons. Engr., Structures, Highways & Bridges)

HUFNAGEL, JAMES R., Mt. Vernon, N.Y. (Struct. Designer, Strobel & Salzman)

HUNNICUTT, J. WELDON, Fort Worth, Texas (Cons. Engr.)

KIRSCHEN, SOLOMON, Philadelphia, Pa. (Struct. Designer, Dorfman-Bloom)

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LIEPINS, JANIS A., New Hartford, N.Y. (Struct. Engr., O'Brien & Gere, Cons. Engrs.)

MALPASS, JOHN I., San Francisco, Calif. (Est. & Specification Writer, Indenco Engineers, Inc.)

MAYER, ALFRED, Freiburg, im Breisgau, Germany (Mfr. of reinforced concrete and engineering firm)

MCGIRK, LON S., JR., Reno, Nevada (Prof of Economic Geology, Mackay School of Mines, Univ. of Nevada)

MCPHERSON, GEORGE H., Honolulu, T.H., (Gen. Mgr., Transit-Mix Concrete, Ltd.)

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PALMORE, ARNOLD BOYCE, El Paso, Texas (Engineering Design & Sales, Structural, The Atlas Bldg. Products Co.,)

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PRICE, SHERMAN S., New York, N.Y. (Civil Engr., Struct., Dept. of Public Works, City of New York)

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ROWLAND, WILLIAM G., Houston, Texas (Design Draftsman, Consolidated Western Steel Div., U.S.S.)

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Continued on p. 32

"Reinforcing rods were set and concrete poured almost the day after engineering details were available," cites Mr. M. Lapidus, architect for Miami Beach's luxurious new Eden Roc Hotel. In just 13 weeks all 14 floors of the 401-room structure were up . . . with reinforced concrete. The result: incalculable savings in time and extra hotel revenue. The design flexibility of the medium is shown "in the interesting form of the balconies, various projections and overhangs which could only have been achieved with reinforced concrete," further states Mr. Lapidus. On important projects from coast to coast, reinforced concrete is providing better structures for less money. It is inherently firesafe, and highly resistant to wind, shock, and quake. On your *next* job, design for reinforced concrete.

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ROUSSEAU, LARRY J., New Orleans, La. (Civil Engr. in structural design, Tulane University)
TERO, MARVIN J., Mountain Iron, Minn. (C. E., Field Inspector., Anaconda Co., Aurora, Minn.)
TOPPING, CHARLES R., Portland, Oregon (Struct. Design, Delmar L. McConnell)

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ARAGON, JUAN LUIS, San Pedro de Montes de Oca, Costa Rica, C.A. (Univ. of Costa Rica)
BURNS, EDWIN ALBERT, San Jose, Costa Rica (Univ. of Costa Rica)
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ZECHIEL, KENNETH C., West Lafayette, Ind. (Purdue Univ.)

LIGHTWEIGHT CONCRETE

This month's articles on lightweight concrete will be followed by a third and fourth of the series in the

November JOURNAL

Tools, Materials, Services

Under this heading note is made of producer literature of presumed technical interest (and available from its source for the asking) to ACI users of tools, equipment, materials, accessories, and special services.

Masonry nails and concrete stub nails

Reports of laboratory findings on the holding power of Stronghold and Screw-Tite nails, as developed in tests at Virginia Polytechnic Institute, have been published by Independent Nail and Packing Co. Technical data sheets, bound in one book, cover research on nails and fasteners used for many different purposes, including sections on masonry nails, effectiveness of hammer-driven masonry nails in concrete, and drivability and holding power of heavy-duty masonry nails in concrete.—Independent Nail & Packing Co., Bridgewater, Mass.

Grouting inlet for prestressing cable

Universal Metal Hose Co. now offers as an accessory, grouting inlets on their Steelflex U-100BX Armouring Casing used for enclosing cable or wire in post-stressed concrete construction. These inlets connect conveniently to ¾-in. pipe extending inlet to the point desired outside the concrete forms.—Universal Metal Hose Co., 2137 South Kedzie Ave., Chicago, Ill.

Curb and gutter forms

A complete line of combination curb and gutter forms has been announced by General Road Machines, Inc. Supplied in 10-ft sections, the forms are made of electro-welded 10-gage special alloy steel. Back curb and front gutter forms are slotted every foot in length for division plates. Forms have close-fitting sleeve joint connections, said to provide quick, easy alignment.

Face curb forms have sliding dowel connections and slots are provided for locking lugs on division plates. Tapered wedges in locking lugs hold face curb forms in place. Each 10-ft section has single-wedge stake pockets on the front gutter form and single or double-wedge stake pockets on the back curb form, depending on form height. Stakes, of 7/8-in. diameter re-rolled rail material with hot-forged points, are available in 18, 24, 30, 36 in., and other lengths on special order.

General combination curb and gutter forms are available with full depth or skeleton division plates, with overhead hangers, and with lateral braces and anchor stakes. Two supports are required for each 10-ft section.

LOOKING AHEAD

September 18-20, 1956—American Railway Bridge and Building Assn., Chicago, Ill.

September 19-20, 1956—Modern Masonry Conference, Allied Masonry Council, Building Research Institute, Washington, D. C.

September 25-26, 1956—35th Annual Fall Meeting and chapter presidents' conference, Producers' Council, Inc., Wade Park Manor Hotel, Cleveland, Ohio.

October 15-19, 1956—Convention American Society of Civil Engineers, Hotel William Penn, Pittsburgh, Pa.

October 19-20, 1956—Southeastern Regional Meeting, Society of American Military Engineers, Atlanta, Ga.

October 22-24, 1956—Seventh National Conference on Standards and 38th Annual Meeting, American Standards Assn., Hotel Roosevelt, New York, N.Y.

October 22-26, 1956—44th National Safety Congress and Exposition, National Safety Council, Conrad Hilton, Congress, Morrison, and La Salle hotels, Chicago, Ill.

October 23-25, 1956—Ninth Regional Meeting, American Concrete Institute, Sheraton-Mt. Royal Hotel, Montreal, Canada

October 28-November 1, 1956—Annual Meeting, American Council of Independent Laboratories, Inc., Savoy Plaza Hotel, New York, N. Y.

October 29-31, 1956—Sixth Annual Short Course of Instruction, American Concrete Pipe Association, Chase Hotel, St. Louis, Mo.

November 1-2, 1956—Annual Meeting and Exhibit, Society for Experimental Stress Analysis, Deshler-Hilton Hotel, Columbus, Ohio

November 12-19, 1956—8th Annual Convention, American Concrete Pressure Pipe Assn., Castle Harbour Hotel, Tucker's Town, Bermuda.

November 27, 1956—Annual Dinner, American Institute of Consulting Engineers, Waldorf Astoria Hotel, New York, N. Y.

Jan 28-31, 1957—Plant Maintenance and Engineering Show, Public Auditorium, Cleveland, Ohio

Face curb form heights range from 4 to 9 in. Back curb and front gutter forms are available in heights to meet individual customer requirements.—General Road Machines, Inc., Niles, Ohio.

Concrete mixers

The Supermix series of concrete mixers for industrial contractors and residential builders has been announced by Speedmatic Research and Equipment Corp. All mixers in the series have a pressed steel mixing bowl. Yoke is supported at both ends in dirt and grease sealed bearings which are carried in spherical self-aligning housings. Ring gear, being subject to both accidental breakage and excessive wear, is made up of eight removable sections, supported and aligned by true running backing rings.

Model 35G is powered by 2½- to 3-hp air-cooled gasoline engine with built-in reduction running in oil. Chain drive with steel sprockets powers the mixing operation. Power is also available with use of 1-hp, 110 or 220 volt, single-phase 60-cycle heavy-duty electric motor, a 3½-hp gasoline engine, or a 2-hp water-cooled gasoline engine. Capacity is in excess of 3½ cu ft. Drum diameter is 30 in. with drum depth of 31 in. and opening of 18 in. Charging height is 42 in. and discharge height is 27 in. Other models in this series are 6 cu ft with 14-hp motor, 11 cu ft with 25-hp motor, and 16 cu ft with 36-hp motor. —Speedmatic Research and Equipment Corp., 10 Port St., Pulaski, N. Y.

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DISCUSSION PROCEEDINGS V. 52

Discussion closed September 1, 1956

May Jl. '56

Building Code Requirements for Reinforced Concrete (ACI 318-56)—ACI Committee 318

Basis for Classifying Deleterious Characteristics of Concrete Aggregate Materials—E. G. Swenson and V. Chaly

Manufacturing Methods in Construction—Donald M. MacLeay

June Jl. '56

Recommended Practice for Winter Concreting—ACI Committee 604

Tensile Crack Exposure Tests of Stressed Reinforced Concrete Beams—Thomas B. Kennedy

Building Frames in Prestressed Concrete—David P. Billington

Autogenous Healing of Cement Paste—Kenneth R. Lauer and Floyd O. Slate

Analysis and Testing of Translational Shells—Mario G. Salvadori

Air Entrainment in Mortars—G. M. Bruere

DISCUSSION PROCEEDINGS V. 53

Discussion closes November 1, 1956

July Jl. '56

Structural Design Considerations for Pavement Joints—Subcommittee III, ACI Committee 325

Shearing Strength of Reinforced Concrete Slabs—Richard C. Elstner and Eivind Hognestad

Prestressed Concrete Pavement for Airfields—Thomas Cholnoky

Earthquake Resistant Design Based on Dynamic Properties of Earthquakes George W. Housner

Structural Analysis by Dynamic Load Parameters—James A. Cheney

Spacing of Reinforcement in Beams—S. J. Chamberlin

Discussion closes December 1, 1956

Aug. Jl. '56

Considerations for Construction of Subgrades and Subbases for Rigid Pavement—Subcommittee I, ACI Committee 325

Some Implications of Recent Diagonal Tension Tests—Phil M. Ferguson

Conduction Calorimeter for Measuring Heat of Hydration of Portland Cement at Elevated Temperatures and Pressures—N. C. Ludwig and S. A. Pence

Bhakra Dam—Design and Construction Features—C. L. Handa and O. P. Chadha

An Expression for Creep and Its Application to Prestressed Concrete—Cevdet Z. Erzen

Empirical Time-Strength Relations of Concrete—Myron L. Goral

Discussion closes January 1, 1957

Sept. Jl. '56

Strength of a Concrete Slab Prestressed in Two Directions—A. C. Scordelis, K. S. Pister, and T. Y. Lin

Lining of the Tecolote Tunnel—E. R. Crocker

Theory of Stresses Induced in Reinforced Concrete by Applied Two-Dimensional Stress—Bruce H. Falconer

Some Effects of Carbon Dioxide on Mortars and Concrete—I. Leber and F. A. Blakey

Analysis of Inelastic Bending Stress in Concrete Beams—James M. Prentis

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Manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315-51)

This standard is of large format, bound to lie flat, and presents typical engineering and placing drawings with discussion calling attention to important considerations in designing practice. It was prepared to simplify, speed, and effect standardization in detailing. It was revised in 1951 to bring it into accord with design changes made possible by the use of the new A 305 bars. The only publication of its kind in English, it is meeting wide acclaim among designers, draftsmen, and in engineering schools. Price—$3.00, to ACI Members—$1.75.

Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures (ACI 315A-53)

This standard is of large format, bound to lie flat, and presents typical engineering and placing drawings for highway structures. It was prepared to simplify, speed, and effect standardization in detailing. Sections on drawings and details and fabricating shop practice are translated into practical examples in typical drawings of piers, various type bridges, retaining walls, and various type culverts. Prepared in collaboration with American Assn. of State Highway Officials with cooperation of Concrete Reinforcing Steel Institute. Price—$2.75, to ACI Members—$1.50.

ACI Manual of Concrete Inspection (1955)

This 232-page pocket-size book, bound in durable cover, sets up what good practice requires of concrete inspectors and background information on the "why" of such good practice. This third edition was revised and extended by Committee 611 to include new practices evolved since the second edition of 1941. Price—$2.50, to ACI Members—$1.50

Reinforced Concrete Design Handbook (1955)

An extensive revision by a reconstituted Committee 317 of the original well-known edition of 1939. Tables are revised to reflect changes in range of working stresses encountered in general practice. The original objective to reduce the design of members under combined bending and axial load to the same simple form as is used in the solution of common flexural problems is retained. Price—$3.50, to ACI Members—$2.00.

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